SULFAPYRIDINE

Pharmacologically, this is a less desirable drug than sulfanilamide, as it is poorly absorbed, highly acetylated, and excreted with difficulty, but it is far superior in therapeutic effectiveness. Infections in which sulfanilamide is quite ineffective may be controlled by its use. This outweighs its pharmacological and toxic drawbacks, even the very troublesome nausea, and it would be a highly valued drug but for the fact that sulfathiazole is equally effective and less toxic. At present the indications for its use are narrow. In serious meningitis of any type, the superior penetration of sulfapyridine into the spinal fluid, as compared with sulfathiazole, may be valuable. However, sulfathiazole penetrates through inflamed meninges better than was previously thought, and should ordinarily be adequate. Where sensitivity to sulfathiazole is present, it may be possible to give sulfapyridine without trouble, although this is by no means invariably true.

When used, it should be given in an initial dose of two grams orally, or intravenously as the sodium salt, and followed by a one-gram dose every four hours. Urinary output should be kept above 1,500 cubic centimeter daily, to diminish the possibility of the formation of urinary calculi of acetylsulfapyridine.

SULFATHIAZOLE

This is the most important sulfonamide drug in use at present. It has a wide range of potency, and is a fairly desirable drug from the pharmacological approach, although its rapid excretion may lead to the precipitation of the drug in the urinary tract. Vomiting is seldom severe, and anemia and cyanosis are much less marked than that associated with the administration of sulfanilamide.

It is applicable wherever bacterial chemotherapy is desired, and in most situations is the preferred drug. In pneumococcus and staphylococcus infections, it is definitely the drug of choice.

Sulfathiazole is more effective than the earlier sulfonamides in the treatment of urinary tract infections caused by organisms other than E. coli. Even Streptococcus fecalis has been said to be susceptible to its action, but this is, unfortunately, not the case in most instances. This drug may be used in infections associated with the colon bacillus alone, although sulfanilamide is usually entirely adequate.

The late complications—fever, skin rash, and conjunctivitis—are more frequent and severe with sulfathiazole therapy, and its use in infections requiring treatment for more than a few days is associated with greater hazards than with the sulfonamides described above.

Treatment should be started with an initial dose of one to four grams orally, or intravenously as the sodium salt if oral medication is difficult, and followed every four hours by 1 to 1.5 grams by mouth. Urinary output should be maintained above 1,500 cubic centimeters per day.

Sulfathiazole has been less used locally as a powder or paste than sulfanilamide, but there is no reason to believe it would not be as effective as that drug when this type of therapy is indicated.

SULFAGUANIDINE

This new sulfanilamide derivative is poorly absorbed, and so a considerable amount of the drug remains in solution in the bowel. It has been suggested that it may be useful in dysentery and cholera. A few clinical tests have shown, however, that larger amounts are absorbed than was previously supposed, that dysentery bacilli are not always eliminated from the stools of chronic carriers, and that its use preoperatively before operations on the bowel is not invariably attended by a significant decrease in the number of organisms present in the feces. It is decidedly in the experimental stage.

SULFADIAZINE

This well absorbed, and apparently rather nontoxic derivative, is very promising at the moment, and may prove to be the next step in the sulfonamide ladder.

PROMIN

Although quite toxic, this drug is also highly effective experimentally. Little can be said about its future.

SUMMARY

In summary, it may be said that, just as sulfanilamide gave way to sulfapyridine, which in turn gave way to sulfathiazole as a therapeutic agent in infections, so now the latter drug may be expected to yield to still more effective drugs, as these are introduced in turn. It is also probable that drugs will be developed with special indications based on specific properties. The possible value of the poorly absorbed sulfaguanidine in enteric infections is an example of this trend.

2398 Sacramento Street.

PUBLIC HEALTH ACTIVITIES AND RESPONSIBILITIES*

By ELMER BELT, M.D.
Los Angeles

THANK you, Mr. Director, for introducing me to your radio audience.

I should like to tell them that I believe the great lesson which the world tragedy of today will hold for civilization is the now demonstrated fact that those nations who have tasted freedom regard it with greater love than the love of life itself. There has been a great deal of talk about the softening effect which the democratic way of life has had upon those who dwell within a democracy. Surely, by and large, we have had greater ease and greater security and, largely due to the fact that we have all had greater leisure, those of our citizens who have a mechanical bent or scientific insight have made the way of life better for all of us by the free exercise of their peculiar geniuses. Now we have come to trial and we are sternly standing up to the standards set for us by the founders of our republic. They risked all to give us what we have and we who have taken that talent and developed it into ten talents are ready again to protect our heritage with our lives. It is not material means

* A radio address given over KFWB on June 7, 1941.

for which we fight. Suddenly, we see clearly that ideals and ethics mean more than wealth and ease and under their banners we take our stand. Yet in this hour we look back a little ruefully along the way which we have come and wish that we had done greater things with the opportunities given us. Now that we need great strength, we can see where selfish individual motives have stood in the way of greater progress.

SELECTIVE SERVICE

The operation of the Selective Service Act is revealing the fact that of 700,000 men examined, the condition of health of these men is such that only 400,000 have been found fit for military duty. These are our youths, in the age groups of greatest physical strength, yet diseases of teeth, eyes, heart, musculoskeletal structures, ear, nose and throat, hernia, venereal disease and diseases of the lungs cause three out of seven to be rejected.

DEPARTMENTS OF PUBLIC HEALTH

Our departments of public health, with the aid of our practicing physicians, have been given powers which take two forms: the protection of the public against unsanitary environmental conditions and polluted or offensive foodstuffs, and the protection of the public against the dissemination from person to person of communicable diseases. As a result of the efforts of public health departments along these two lines, diseases which could be controlled by environmental sanitation, such as cholera, plague and typhoid, have begun to disappear from civilized communities. Bacteriological and immunological methods have made rapid progress in the control of communicable diseases like diphtheria. The establishment of organized programs for hygienic living through the slow and tedious process of education has had its effect upon the national scourge, tuberculosis. Control of infant mortality has occurred due to educational propaganda which had been learned in the campaigns against tuberculosis, and along with the growth of health education has come a desire on the part of the people for health examinations at frequent intervals in order to bring about the detection of deviations from the normal in their very earliest stages. Thus the line between preventive and curative medicine has become obscure and every physician virtually becomes, in his daily practice, more and more a hygiene advisor.

The many service organizations which characterize the American way of life have also taken on their share of the promotion of public health as one of their basic public activities and then conduct campaigns for better housing, better zoning laws, systems of transportation which open up new residential districts, better roads, connecting the rural districts with the cities, improvement in agriculture and in the handling of foods.

In the last analysis, however, it is the official health agencies which must be responsible for seeing that public health is adequately protected. In the United States the fundamental unit of health organization is the local health department of the city, town or country, which consists of a board of health, a health officer and his staff. Over the local health department stands the state department of health, which also includes a state board of health or public health council, which guides the policies, and a health commissioner and staff, which executes them. The United States Public Health Service, although a part of the Federal Security Agency, exercises essentially the functions of a Federal Department of Health. It has direct control of quarantine at the seaports and of health problems of an interstate nature, and it also serves as a guiding influence for the state departments of health, just as they in turn stimulate and guide the local health departments. Thus, there is a close correlation in the United States between the federal, state and local health departments.

COÖPERATION IS IMPORTANT

But, finally, the success of the whole structure depends upon the close coöperation in the work of public health of each practitioner of medicine. Each doctor is in fact a state epidemiologist, because the law requires that he shall report cases of communicable disease to the local health officer upon a form that is provided by the state. Without these reports no activity in the control of communicable disease can be carried out efficiently. Thus each practitioner becomes an active participant in the state's organization for the maintenance of public health, and the doctor who is a good citizen is particularly careful about the discharge of this public duty.

WORK AHEAD

While much has thus been done to reduce the epidemic diseases, there remains a great deal to be done for the health of the individual. Anxiety, uncertainty and insecurity have contributed to ill health, particularly in the field of mental illness. Of one million patients in hospitals every day of the year, 600,000 are in mental and nervous disease hospitals. In this land of ours, which has the most adequate resources in the world, there are many people who come home from work exhausted, without enough food to eat, without the right kind of food to eat, greeted by children who are undernourished. Distribution of surplus commodities, general relief from federal and state aid organizations and an abundance of free medical care have helped us through lean years, but have not been enough. In the period from December, 1917, to September, 1918, when three million men were examined for military service, 70 per cent were qualified. Now only 56 per cent are qualifying. Our general population is obviously not profiting by the available advances in medical knowledge. Is it because we cannot afford medical care ?

CALIFORNIA PHYSICIANS' SERVICE

In the State of California the doctors have created an organization which they call the California Physicians' Service. It is run and owned by the doctors themselves. By means of it hospital and doctor bills may be met by those who belong to this plan on a monthly fee basis. The doctors in

the State of California are pretty largely united in an effort to make this plan a success. You will probably find that your own favorite doctor is a member of this plan, because out of 6,600 doctors in the state society, 5,500 have joined this plan.

This organization is operated upon the insurance principle and it costs those who join it very little for the immense service given, because the only overhead is a 20 per cent operating cost. This cost is diminishing in proportion as the plan grows in size.

Three different types of policies may be had. One insures against the cost of surgical procedures only and pays the cost of surgery and hospital if a surgical procedure is found to be necessary. This contract is primarily for large industrial groups. At a less cost a policy is issued which covers hospitalization only, but hospitalization for any type of illness. The third type of policy provides full coverage for medical care and hospital costs. At present 30,000 people in our State are cared for within this plan. As the public is learning of it, the curve of growth is sharply upward. Membership is limited to employed groups of persons. However, those who have salaries in excess of $3,000 annually are not permitted to join, though many such would like to do so. The Federal Government has recently shown its approval of the plan and its confidence in it by arranging to pay part of the premium for those farm families who wish to join it and who are already under the wing of the Federal Farm Security Administration. This is the contribution of the practicing physicians of the State of California to the social security of the workers of our State. It is a genuine contribution. No one is getting rich as a result of the operation of this plan. Each doctor and hospital is paid for work actually done and, except for the very small overhead for clerical work, all income is devoted to this purpose. Such fees are small but adequate and secure, and the doctors are thrilled to see that by means of this plan the most complete and modern medical service can be extended to workers everywhere throughout our State.

This is but one of the many efforts being made to protect the American way of life, while we prepare to preserve and defend it in whatever part of the world it may be challenged.

1893 Wilshire Boulevard.

RÔLE OF THE DOCTOR OF MEDICINE IN THE LIFE AND HEALTH OF THE AMERICAN CITIZEN*

By RUTH KLIEWER
Bakersfield

SINCE man's emergence upon the earth, illness has been a major component of his personality. Disease has run the gamut of life with him. Medicine, trailing disease, has metamorphosed from the weird rituals of our early ancestors down the centuries to the present highly scientific application of surgery and chemotherapy in conquering the microorganisms which prey on human life. Consequently, in view of the ages which medicine has spanned, in the light of man's successes and failures in his struggle to survive, the rôle of the doctor of medicine in the life and health of the American citizen has been, is, and will continue to be one of unequalled significance.

Today, as we study the records of progress made in the various industries and professions, note the changes in social structure, and speculate on future achievements, we cannot exclude from our survey the obvious fact that the greater part of America's survival and continued development must be credited to the profession which has kept us, as individuals, alive and able-bodied: the medical doctors. More remarkable even, is the fact that they have made, during the last two and one-half decades, more contributions to the preservation of life than in all the years previous.

Let us picture, for a moment, the health situation in America at the beginning of the twentieth century. The United States was just settling back from three centuries of wars and pioneering. Conquest of unexplored territory occupied the lives of old-timers and immigrants. The great expanses which separated towns, settlements, and homesteads, plus primitive methods of travel, made communication difficult. Due to the high frequency of illness from perils of pioneering and constant exposure to reinfection from Old World immigrants, an ignorance of pestilences, the obscurity of disease, the scarcity of doctors, and the superstitions upon which aid was administered, the system of living was precarious. Sanitation was a term foreign to the populace. Approaching symptoms of disease eluded recognition. Subjecting herself and her child to the hazards of unhygienic surroundings and inadequate accommodations, the prospective mother was confined in her own home and was delivered by a midwife. New-born generations were fed on adult foods from the very start, and a harvest of 1,500,000 American citizens was reaped by Death in 1900, nearly one-third of which died of diseases seldom occurring today, so well are their causes and treatment known.

Thus we, as part of a human race afflicted since its origin by a myriad of diseases, and made stupid and incompetent thereby, and devoid of scientific treatment for our afflictions, presented to the medical doctor less than half a century ago a problem of stupendous propensity.

With the birth of cities, the West conquered, state governments established, the nation unified, the institution of more efficient communication, the successful establishment of public education, the extension of mechanical inventions, and the complex social situations created by the spirit of the new era and the increasing population, came an opportunity for more Americans to devote their energies to physiological, chemical, and bacterial research. Then, from the few general laws of science known and accepted, and a less number of

* Prize essay in contest open to high school and junior college students, sponsored by the Committee on Public Health Education of the California Medical Association, May, 1941.
Essay prize was awarded to Miss Ruth Kliewer, a student in the Bakersfield Junior College, Bakersfield, California.